UNIVERSITY ASSESSMENT COMMITTEE
Feedback to Academic Departments on Assessment Activities Reported in __2012-13___ Annual Reports
UNDERGRADUATE PROGRAMS

DEPARTMENT____Biology_____DATE_____May 8, 2014_____

PROGRAM(S) COVERED IN REVIEW ____B.S. in Biology_(four majors and teacher certification)_____

COMMITTEE MEMBER(S) CONDUCTING REVIEW ***Devon Hansen, Mary Askim-Lovseth, and Casey Ozaki***

1. STUDENT LEARNING GOALS

- Were any goals referenced? YES__X__ NO___ QUALIFIED Y/N ___
- If so, were goals well articulated? YES__X__ NO___ QUALIFIED Y/N ___
- Do goals address student learning? YES__X__ NO___ QUALIFIED Y/N ___

Comments:
The Biology Department has four distinct majors—(1) Biology (options in General Biology; Molecular, Cellular, and Developmental Biology; and Ecology and Evolutionary Biology; (2) Molecular and Integrative Biology (options in Basic Life Science and Enhanced Applied Life Science); (3) Biology (Pre-Health Sciences emphasis); and (4) Fisheries and Wildlife Biology. Secondary teacher certification is also offered when the students complete one of the four major programs (plus additional coursework) along with the necessary Secondary Education requirements.

The undergraduate assessment plan for Biology has two student learning goals. Each goal has three or more anticipated educational outcomes. The plan also describes the educational experiences that are related to the student learning goals and educational outcomes.

With several majors and a certification, there should be some distinction among the student learning goals and objectives to differentiate among each major. All Biology majors would not be expected to graduate with the same content knowledge and set of skill competencies. The uniqueness of the graduates within each program should be noted to effectively guide assessment and student learning.

In addition to the program goals, please also consider UND's institutional and Essential Studies goals for student learning (shown in alignment within parentheses) and identify which goals are similar to program goals.
__X_____ 1 Communication – written or oral ("able to write and speak in various settings with a sense of purpose/audience")
__X_____ 2 Thinking and reasoning – critical thinking (or "be intellectually curious"; analyze, synthesize, evaluate)
__X_____ 3 Thinking and reasoning – creative thinking (or "be intellectually creative"; explore, discover, engage)
__X_____ 4 Thinking and reasoning – quantitative reasoning ("apply empirical data…analyze graphical information")
__X_____ 5 Information literacy ("be able to access and evaluate…for effective, efficient, and ethical use")
_____ 6 Diversity ("demonstrate understanding of diversity and use that understanding…")
_____ 7 Lifelong learning ("commit themselves to lifelong learning")
_____ 8 Service/citizenship ("share responsibility both for their communities and for the world")

Comments regarding program goals and alignment with institutional and Essential Studies goals:
Departmental Student Learning Goal 2, which relates to scientific inquiry, is aligned with several Institutional and Essential Studies goals.

2. ASSESSMENT METHODS

Were any specific assessment methods referenced? YES__X___ NO____ QUALIFIED Y/N ____

- If so, were specifically chosen assessment methods appropriately aligned with individual goals? YES__X___ NO____ QUALIFIED Y/N ____
- Were both direct and indirect assessment methods used as components of a "multiple measures" approach? YES_____ NO____ QUALIFIED Y/N __X__

Comments:
The undergraduate assessment plan notes a variety of direct and indirect assessment methods to measure student learning. The direct methods include multiple-choice assessment exams and written assessment activities, which include the Collegiate Learning Assessment Task (CLAT) and the capstone (Biology 480) investigative research paper and oral presentation. The multiple-choice assessment exam was administered to incoming freshmen and graduating seniors. To assess certain student learning goals not addressed by the multiple-choice exams, the CLAT was administered to graduating seniors. Rubrics are used for several of the student learning objectives.

The assessment methods are direct measures of student learning. No indirect measures are indicated in the annual report. However, the assessment plan notes indirect assessment methods, including the collection of data regarding the success of students in introductory and core courses (grades would not be considered an assessment method because they cannot be aligned with specific student learning), retention and graduation rates (relates to the program rather than student learning), student evaluations, and alumni surveys and career development.

3. ASSESSMENT RESULTS

Were any assessment results reported? YES__X__ NO____ QUALIFIED Y/N ____

- If so, were the results clear in terms of how they specifically affirm achievement of goals? YES__X__ NO____ QUALIFIED Y/N ____
- If so, were the results clear in terms of how they indicate need for improvement? YES__X__ NO____ QUALIFIED Y/N ____
- Were the results tied to goals for student learning? YES__X__ NO____ QUALIFIED Y/N ____

Comments:
Data collected for graduating seniors taking the 2012-2013 assessment exams reveal that their performance level was nearly 4% higher than for seniors the previous year. The annual report concludes that higher performance level for senior students reflect curricular changes implemented during the past few years.

Summaries from assessment rubrics used to collect data for graduating seniors in the capstone course reveal that the performance level was ranked as "good" or above on the research paper. Overall, rankings were high for all the elements of an effective oral presentation. Mean scores (using a 5 point scale) were provided for all of the rubric criteria.

No indirect assessment data were reported.

In addition to program goals, some assessment results may be applicable to institutional and Essential Studies goals. Indicate any goals for which the program presents findings, and, for indicated items, describe findings below.
___X____ 1 Communication – written or oral ("able to write and speak in various settings with a sense of purpose/audience")
___X____ 2 Thinking and reasoning – critical thinking (or "be intellectually curious"; analyze, synthesize, evaluate)
_____ 3 Thinking and reasoning – creative thinking (or "be intellectually creative"; explore, discover, engage)
_____ 4 Thinking and reasoning – quantitative reasoning ("apply empirical data…analyze graphical information")
___X____ 5 Information literacy ("be able to access and evaluate…for effective, efficient, and ethical use")
_____ 6 Diversity ("demonstrate understanding of diversity and use that understanding…")
_____ 7 Lifelong learning ("commit themselves to lifelong learning")
_____ 8 Service/citizenship ("share responsibility both for their communities and for the world")

Comments regarding results and the application of results to program, institutional, and Essential Studies goals:
Assessment data were provided for oral communication, written communication, information literacy, and critical thinking. It was noted that "trends in performance" are looked at in order to identify strengths and weaknesses among the learning objectives.

4. CLOSING THE LOOP

Were any actions taken on the basis of assessment results reported? YES_____ NO__X__ QUALIFIED Y/N ____

- If so, do curricular or other improvements/ changes arising from assessment results directly address goals for student learning? YES_____ NO____ QUALIFIED Y/N ____

Comments:
No closing the loop actions were indicated in the annual report.

SUMMARY

Strengths	*Areas for Improvement*
__**X**__ A specific plan for assessment is in place.	____ No specific plan for assessment is in place.
__**X**__Student learning goals are well-articulated.	____ Student learning goals are not well-articulated.
__X__Assessment methods are clearly described.	____ Assessment methods are not clearly described.
__X__Assessment methods are appropriately selected.	____ Assessment methods are not appropriately selected.
__X__Assessment methods are well-implemented.	____ Assessment methods are not well-implemented.
____Direct and indirect methods are implemented.	____ A single type of assessment methods predominates.
__X__Results are reported.	____ No results are reported.
____Results are tied to closing the loop. (Decision-making is tied to evidence.)	__X__ Results are not clearly tied to closing the loop. (Decision-making is not directly tied to evidence.)

OVERALL SUMMARY AND RECOMMENDATIONS:

The Biology Department has a well-articulated assessment undergraduate plan, but the plan addresses biology as one program. With the four distinct majors, along with teacher certification, there should be some differences among the students regarding learning expectations. The Department should dialogue about what these differences should be and accommodate those differences within the assessment plan.

Though direct and indirect methods are noted in the assessment plan, with indirect assessment done on an annual basis, no data were reported on the latter. This could provide insightful information on student perceptions of their learning and learning environment.

MATERIALS REVIEWED

__X___ Annual report	__X___ Assessment plan (as posted)
_____ Appendices (cited in annual report)	__X___ Previous assessment review
_____ Other (please describe)	

Reviewer(s):	Name	Mary Askim-Lovseth	Devon Hansen	Casey Ozaki
	Department	Marketing	Geography	Teaching & Learning
	Phone Number	7-2930	7-4587	7-4256
	e-mail	maskim@business.und.edu	devon.hansen@und.edu	carolyn.ozaki@und.edu

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Section 1: __Y___ Section 2: __Q___ Section 3: __Y___ Section 4: __NA___

Coding Key:

- Y = yes, this is done appropriately and well (bearing in mind the kind of program(s) reviewed and recognizing that assessment is a cyclical process, i.e., with additional kinds of data to be collected and analyzed in other years)
- Q = qualified yes as action or progress is apparent; however, evidence is lacking that this is completely and appropriately done
- N = no, this is not done at all, or it is not done in relationship to student learning
- NA = no information reported and it's unclear whether it was done

UNIVERSITY ASSESSMENT COMMITTEE
Feedback to Academic Departments on Assessment Activities Reported in *2012-13* Annual Reports
GRADUATE PROGRAMS

DEPARTMENT__Biology_____DATE__May 4, 2014_____

PROGRAM(S) COVERED IN REVIEW __M.S., Ph.D_____

COMMITTEE MEMBER(S) CONDUCTING REVIEW *Casey Ozaki***,** *Mary Askim-Lovseth, and Devon Hansen*

1. STUDENT LEARNING GOALS

- Were any goals referenced? YES_x___ NO____ QUALIFIED Y/N ___
- If so, were goals well-articulated? YES_x__ NO____ QUALIFIED Y/N ___
- Do goals address student learning? YES_x___ NO____ QUALIFIED Y/N ___

Comments:

There are three learning goals for graduate students in Biology—Goal 1 differentiates between objectives specific to MS and Ph.D students. Goals 2 and 3 are prefaced by a statement referencing increased abilities as students progress through each program. This suggests that expectations differ between the two graduate programs. If that is the case, then it would be expected that benchmarks are defined for skills noted within the subsequent objectives. Two of the three goals list objectives. The third goal does not have specified objectives—the department may want to consider identifying objectives for that goal (i.e, ethics of research, teaching, service).

Also, the most recent version of the assessment plan is 2007. The department may want to consider reviewing in the near future and updating, if needed.

2. ASSESSMENT METHODS

Were any specific assessment methods referenced? YES_x___ NO____ QUALIFIED Y/N ____

- If so, were specifically chosen assessment methods appropriately aligned with individual goals? YES_x____ NO____ QUALIFIED Y/N ____
- Were both direct and indirect assessment methods used as components of a "multiple measures" approach? YES_x____ NO____ QUALIFIED Y/N ____

Comments:

At the graduate level students are systematically assessed using both direct and indirect methods to determine their biological knowledge and comfort with essential research skills such as statistics and writing. Direct assessment is presented as a four-stage process that includes (1) an annual evaluation of student progress focused on curricular, research, and professional progress; (2) a comprehensive examination focused on biological knowledge and communication; (3) the completion of an ethical training course; and (4) a thesis or dissertation for the assessment of research skill and ethical professionalism. They also implemented an initial review "to identify areas in which students might need additional training or coursework, while also providing strong justification for coursework incorporated into Programs of Study."

Indirect assessment of learning and the graduate programs include assessment of retention and graduation rates (not related as directly to student learning objectives), student evaluations, and alumni surveys and career development. Graduate students are also surveyed annually about their perceptions of the program and the learning goals of the program, as well as their thoughts on how well they actually achieved the learning goals.

3. ASSESSMENT RESULTS

Were any assessment results reported?	YES_x__	NO____	QUALIFIED Y/N ____
• If so, were the results clear in terms of how they specifically affirm achievement of goals?	YES____	NO____	QUALIFIED Y/N __X__
• If so, were the results clear in terms of how they indicate need for improvement?	YES__X_	NO___	QUALIFIED Y/N ____
• Were the results tied to goals for student learning?	YES_ X__	NO___	QUALIFIED Y/N ____

Comments:

Data were presented for the primary assessment points: initial review, research proposals, comprehensive exams, thesis/dissertations, enrollment/completion/retention rates, and summary of presentations/papers. Data are reported for both MS and PhD students in aggregate, therefore it is unclear if there was any distinction or difference in outcomes for either group. This would be important to delineate as the expectations should be different for a PhD student compared to a MS student. Were those students in the "Fail" and "Low Pass" categories MS or PhD students? The answer to this would subsequently influence closing the loop activities to improve student learning. Indirect assessment was reported on in the form of graduation and retention rates, yet this information focuses on the program level.

Overall, the report indicates that "Current results indicate that the majority of students are doing well in proposal preparation, comprehensive exams, presentations, theses/dissertations and defenses. Student performance probably reflects, at least in part, the conscious effort of advisors and committees to identify problem areas for each student, and remedies to enhance student development."

4. CLOSING THE LOOP

Were any actions taken on the basis of assessment results reported?	YES____x___	NO____	QUALIFIED Y/N ____
• If so, do curricular or other improvements/ changes arising from assessment results directly address goals for student learning?	YES_____	NO____	QUALIFIED Y/N __X_

Comments:

In the annual review, the department reflected on the previous assessment cycle (2011) and the areas that needed improvement (i.e., immersion in scientific literature, writing skills, and statistical and experimental design skills) at that time. Biology reported that in response to these areas of improvement they revised the curriculum to require coursework to enhance student skills in all three areas. Discussion about the changes in curriculum provided is reported for both MS and PhD students in aggregate, therefore it is unclear if there was any distinction or difference in outcomes for either group. The current assessment results will be reported to the entire Biology faculty Fall 2013. It is expected that this academic year's annual report would provide the details of that discussion.

SUMMARY

Strengths	*Areas for Improvement*
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__X__Assessment methods are well-implemented.	____ Assessment methods are not well-implemented.
____Direct and indirect methods are implemented.	_____A single type of assessment methods predominates.
__X__Results are reported.	____ No results are reported.
____Results are tied to closing the loop. (Decision-making is tied to evidence.)	____ Results are not clearly tied to closing the loop. (Decision-making is not directly tied to evidence.)

OVERALL SUMMARY AND RECOMMENDATIONS:

The assessment plan is clear and well developed and appears to be well implemented. Direct and indirect methods are established and data on both are reported. Biology concluded that their students are generally doing well and did not indicate the need for any changes. That said, the results are scheduled to be presented to the full faculty in the coming fall semester. They did discuss changes made to the curriculum and the implementation of an initial review based on the 2011 annual review.

Suggestions for the assessment of Biology's graduate programs include: review and update (if determined) the assessment plan, disaggregate data by graduate program. Noted previously, the current assessment plan was adopted in 2007 and may benefit from a review and adjustments, if needed. If such a review is undertaken, one suggestion would be to examine the listed indirect measures for their relationship to student learning at the individual level and consider how these assignments aligned with the schedule for assessment review.

MATERIALS REVIEWED

___x__ Annual report	__x___ Assessment plan (as posted)
_____ Appendices (cited in annual report)	__x___ Previous assessment review
_____ Other (please describe)	

Reviewer(s):	Name	*Mary Askim-Lovseth*	*Devon Hansen*	*Casey Ozaki*
	Department	*Marketing*	*Geography*	*Teaching & Learning*
	Phone Number	*7-2930*	*7-4587*	*7-4256*
	e-mail	*maskim@business.und.edu*	*devon.hansen@und.edu*	*carolyn.ozaki@und.edu*

Section 1: _Y____ Section 2: _Y____ Section 3: __Y___ Section 4: ___Q__

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